RETICULITERMES SPECIES IN CALIFORNIA

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Cuticular hydrocarbon mixtures of *Reticulitermes* samples from disparate locations in northern and southern California were characterized and correlated with species determinations. Literature records indicate that there are two extant species of *Reticulitermes* in California: *Reticulitermes hesperus* Banks and *R. tibialis* Banks. In northern California (west of the crest of the Sierra Nevada and north of San Luis Obispo) we have identified 5 cuticular hydrocarbon phenotypes: CA-A, CA-A', CA-B, CA-C, and CA-D. CA-A, CA-A', and CA-C are characterized by an abundance of internally branched monomethylalkanes, whereas, CA-B and CA-D have abundant 5-methyl- and 5,17-dimethylalkanes. CA-A, CA-A', and CA-D are essentially sympatric in the San Francisco Bay Area, but CA-D tends to be restricted to areas near the coast in northern California, whereas CA-A and CA- A' can be found in the inland areas as far north as Mt. Shasta. CA-B and CA-C have only been collected in the Sierra Nevada foothills. In southern California (the coastal area from Santa Barbara south to Oceanside) we have found 2 cuticular hydrocarbon phenotypes: SCA-A and SCA-B. SCA-A is characterized by an abundance of internally branched monomethylalkanes, while SCA-B has abundant 5-methyl- and 5,17-dimethylalkanes. Throughout the range that we have sampled, SCA-A and SCA-B appear to be sympatric with neither phenotype being predominant in any area. The distributions of the northern and southern California populations appear to be parapatric, but the potential zones of overlap have not yet been thoroughly sampled. Characterization of the soldier defense secretion mixtures indicates a one-to-one correspondence of cuticular hydrocarbon phenotypes with soldier defense secretion phenotypes. Even though CA-A/CA-A' are similar to SCA-A in the composition of their cuticular hydrocarbon mixtures, the soldier defense secretions confirm that CA-A/CA-A' ≠ SCA-A; the soldier defense secretions of CA-A/CA-A' contain predominantly _-cadinene (>90%), whereas SCA-A produces a predominance of germacrene A with smaller amounts of _-cadinene (<30%). Likewise, CA-D is similar to SCA-B in the composition of their cuticular hydrocarbon mixtures, the soldier defense secretions confirm that CA-D ≠ SCA-B; the soldier defense secretions of CA-D contain an abundance of geranyl linalool, germacrene A, and _-cadinene, whereas SCA-B produces germacrene A, _-cadinene, but smaller amounts of geranyl linalool. Collections from the type locality of *R. hesperus* produced a phenotype very similar to CA-A' in both cuticular hydrocarbon and soldier defense chemistry, therefore we infer that this cuticular hydrocarbon phenotype represent *R. hesperus*.